# Database Lifecycle Project: Phase 2

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## Revised User Stories

1. **(Simple)** As a Personal User, I want to create a post so that I can share my experiences with friends and family.
2. **(Simple)** As a Personal User, I want to communicate directly with other users so that I can develop a relationship with them.
3. **(Analytical)** As a Personal User, I want to see how many followers I have so that I can see how many people interact with me on Instagram.
4. **(Analytical)** As a Content Creator, I want to know the branded partnership that costs the most money so that I know who not to partner with again in the future.
5. **(Analytical)** As a Business, I want to see what content creators have the most followers from a specific category so that I know which creators to contact for possible branded partnerships.
6. **(Analytical)** As a Business, I want to know the average cost of ads so that I can budget marketing expenses.
7. (**Complex**) As a Personal User, I want to see everybody who comments on my post so that I know who is reacting to my content.
8. (**Complex**) As a Personal User, I want to see who likes my posts so that I know who is enjoying my content.
9. **(Complex + Analytical)** As a Content Creator, I want to be able to see which of my posts has the most likes to see how effective the Instagram promotion feature is.
10. **(Complex - NEW)** As a Content Creator, I want to see all of my followers that are also Content Creators with similar interests so that I can determine who might want to collaborate with me.

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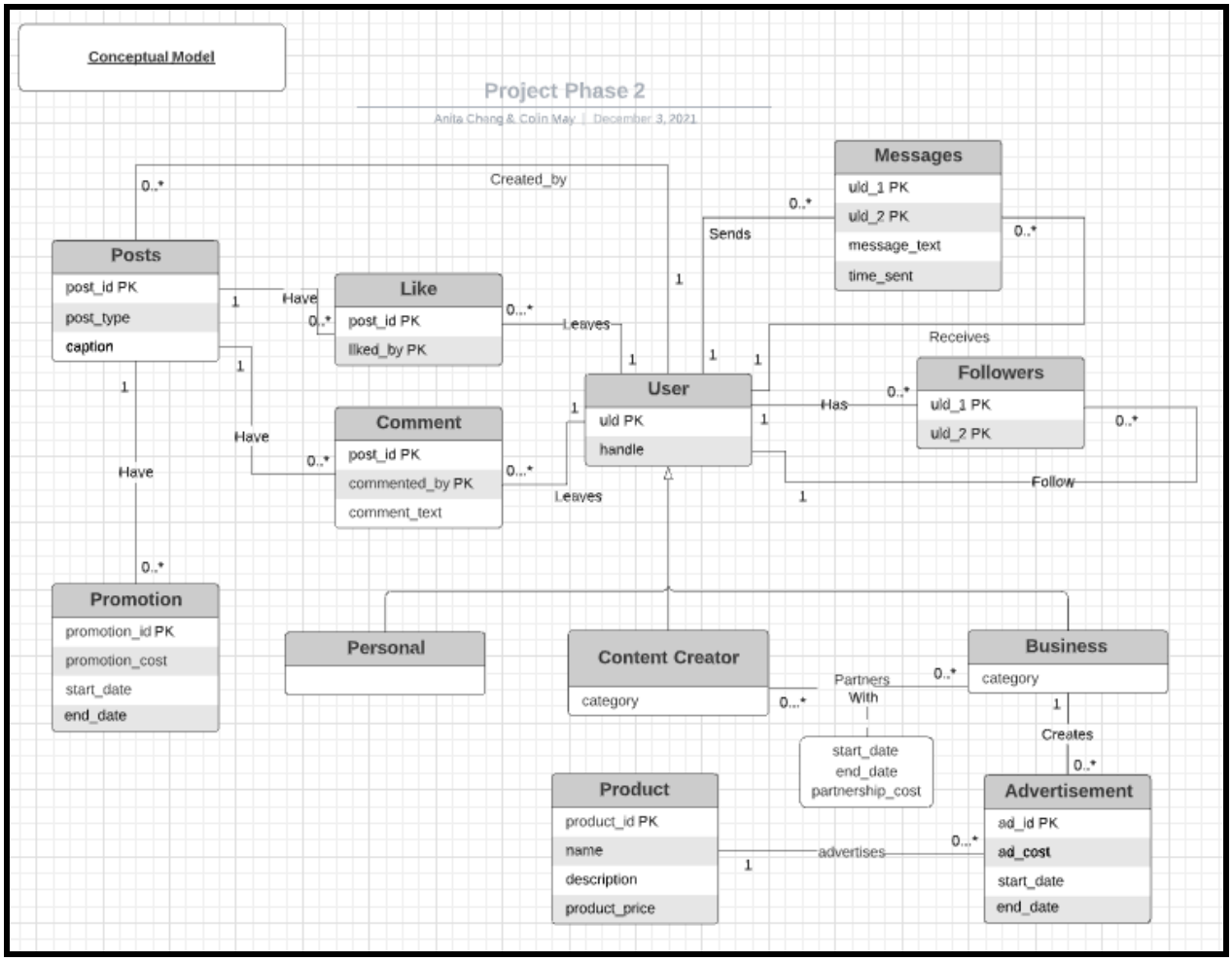
## Revised Conceptual Model




Conceptual Model Link:
https://lucid.app/documents/view/273428b5-1ea2-46f4-b46b-4a8eb58b53a8

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# Relational Model

- User (**uid**, handle)
- Personal (**uid**)
    - Personal inherits PK from User
- Content Creator (**uid**, category)
    - Content Creator inherits PK from User
- Business (**uid**, category)
    - Business inherits PK from User
- Partners_With (**cc_uid**, **b_uid**, start_date, end_date, partnership_cost)
    - Partners_With absorbs PK from Content Creator and Business because of 0..* to 1 relation
- Promotion (**promotion_id**, promotion_cost, start_date, end_date, post_id)
    - Promotion absorbs PK from Posts because of 0..* to 0..* relation

- Comment (**post_id**, **commented_by**, comment_text)
    - Comment absorbs PKs from Posts and User because of 0..* to 1 relations
- Like (**post_id**, **liked_by**)
    - Like absorbs PK from Posts because of 0..* to 1 relation
- Messages (**uid_1**, **uid_2**, message_text, time_sent)
    - Messages absorbs PK from User because of 0..* to 1 relation
- Followers (**uid_1**, **uid_2**)
    - Followers absorbs PK from User because of 0..* to 1 relation
- Posts (**post_id**, post_type, caption, uid)
    - Posts absorb PK from User because of 0..* to 1 relation
- Advertisement (**ad_id**, ad_cost, start_date, end_date, product_id, business.uid)
    - Advertisement absorbs PK from Product because of 0..* to 1 relation
    - Advertisement absorbs PK from Business because of 0..* to 1 relation
- Product (**product_id**, name, description, product_price)

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# Functional Dependencies & Normalized Schema

- User (**uid** (A), handle (B))
    - **FDs:** A → B
    - This relation is in BCNF. This is because there are **no** repeating groups, partial dependencies or dependencies between non-key attributes (transitive)
- Personal (**uid** (A))
    - No functional dependencies.
- Content Creator (**uid** (A), category (B))
    - **FDs:** A → B
    - This relation is in BCNF. This is because there are **no** repeating groups, partial dependencies or dependencies between non-key attributes (transitive)
- Business (**uid** (A), category(B))
    - **FDs:** A → B
    - This relation is in BCNF. This is because there are **no** repeating groups, partial dependencies or dependencies between non-key attributes (transitive).
- Partners_With (**content_creator.uid** (A), **business.uid** (B), start_date (C), end_date (D), partnership_cost (E))
    - **FDs:** A, B → C, D, E
    - This relation is in BCNF. This is because there are **no** repeating groups, partial dependencies or dependencies between non-key attributes (transitive).
- Promotion (**promotion_id** (A), promotion_cost (B), start_date (C), end_date (D), post_id (E))
    - **FDs:** A → B, C, D, E

    - This relation is in BCNF. This is because there are **no** repeating groups, partial dependencies or dependencies between non-key attributes (transitive)
- Comment (**post_id** (A), **commented_by** (B), comment_text (C))
    - **FDs:** A, B → C
    - This relation is in BCNF. This is because there are **no** repeating groups, partial dependencies or dependencies between non-key attributes (transitive)
- Like (**post_id** (A), **liked_by** (B))
    - No functional dependencies.
- Messages (**uid_1** (A), **uid_2** (B), message_text (C), time_sent (D))
    - **FDs:** A, B → C, D
    - This relation is in BCNF. This is because there are **no** repeating groups, partial dependencies or dependencies between non-key attributes (transitive)
- Followers (**uid_1** (A), **uid_2** (B))
    - No functional dependencies.
- Posts (**post_id** (A), post_type (B), caption (C), uid (D))
    - **FDs:** A → B, C, D
    - This relation is in BCNF. This is because there are **no** repeating groups, partial dependencies or dependencies between non-key attributes (transitive)
- Advertisement (**ad_id** (A), ad_cost (B), start_date (C), end_date (D), product_id (E), business.uid (F))
    - **FDs:** A → B, C, D, E, F
    - This relation is in BCNF. This is because there are **no** repeating groups, partial dependencies or dependencies between non-key attributes (transitive)
- Product (**product_id** (A), name (B), description (C), product_price (D))
    - **FDs:** A → B, C, D
    - This relation is in BCNF. This is because there are **no** repeating groups, partial dependencies or dependencies between non-key attributes (transitive)

## Note: There is no Normalization to be done since all relations are in BCNF